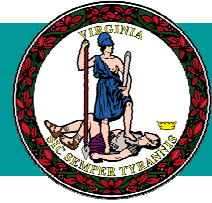


# Hampton Roads Interoperability

## Hampton Roads Area Interoperability Projects and Progress



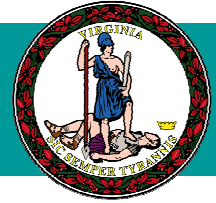
# Panelists



- **Doug Onhaizer**  
Communications Administrator  
City of Virginia Beach
- **Rob DeLauney**  
Radio Systems Engineer  
City of Virginia Beach
- **Paul Torpey**  
Systems Analyst  
BAE Systems for the Department of Justice

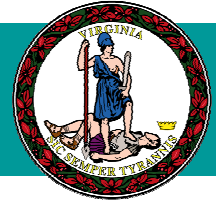


# Panel Agenda



- Hampton Roads Regional Overview
- Hampton Roads Tactical Regional Area Network (HRTacRAN)
- Overlay Regional InterOperability Network (ORION)
- DOJ 25 Cities Initiative
- Interoperable Communications Summary
- Questions and Answers





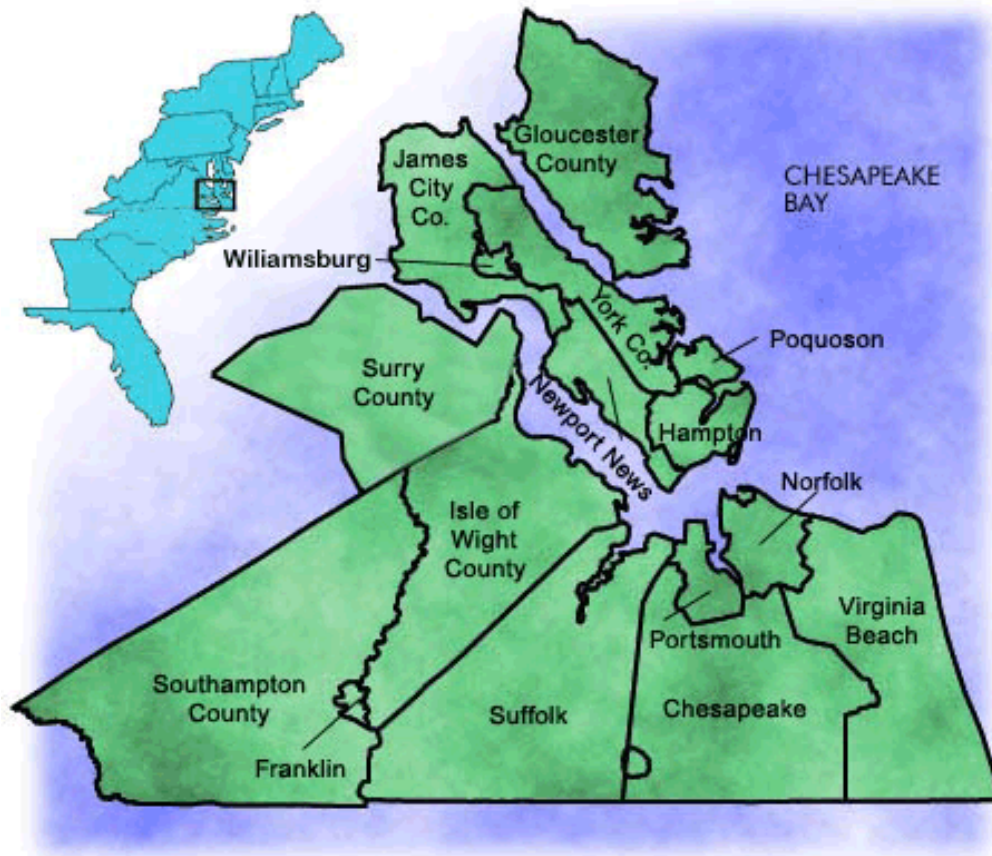
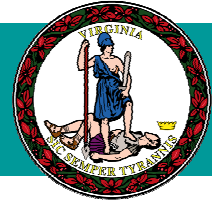
# Hampton Roads Overview

Interoperability Projects take  
Commitment and Well Organized  
Governance





# Hampton Roads

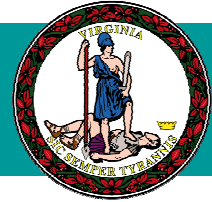


**Population – approximately 1.6 million**  
**Land Mass – approximately 3,000 sq miles**

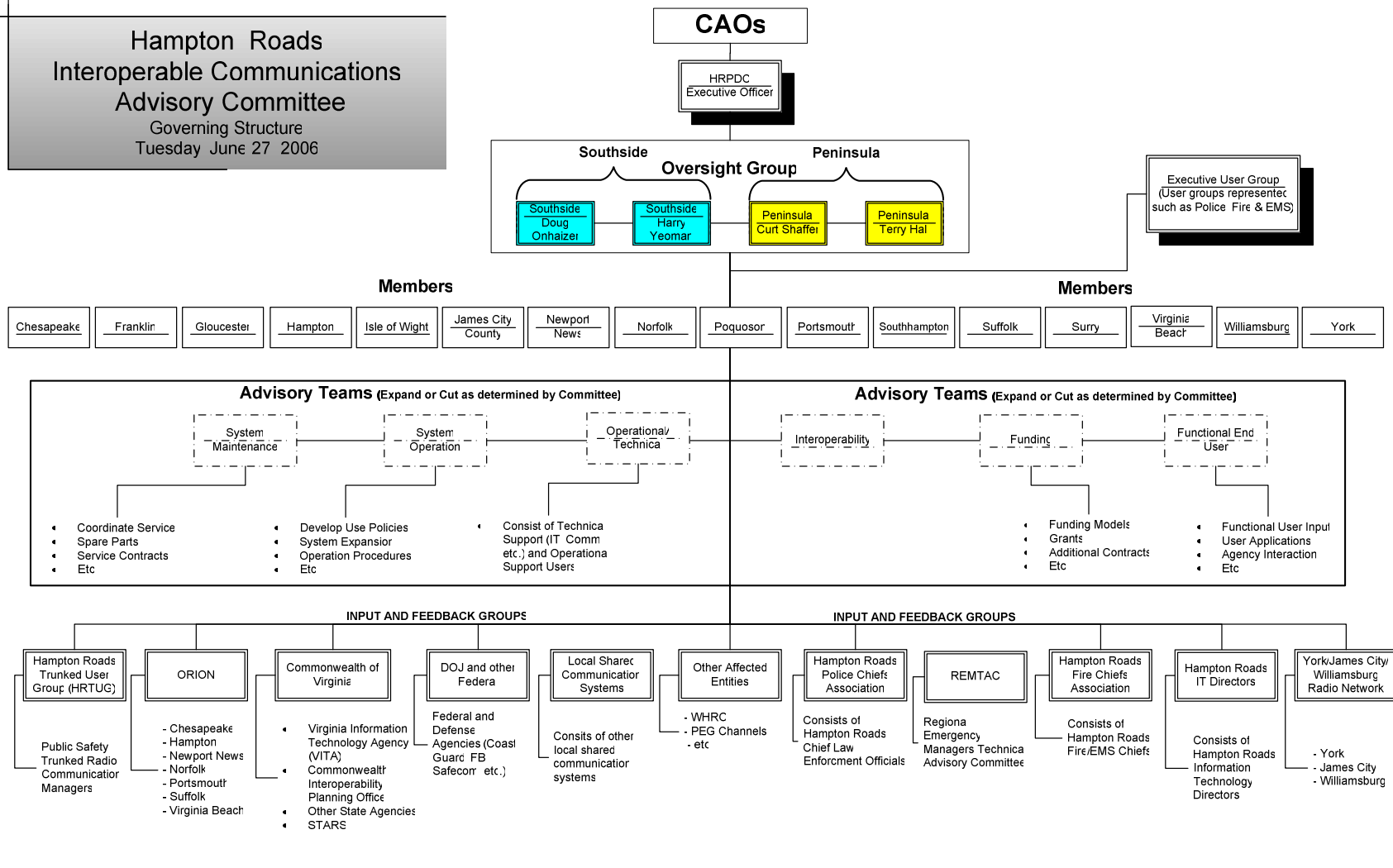
- Chesapeake
- Franklin
- Gloucester County
- Hampton
- Isle of Wight County
- James City County
- Mathews County
- Newport News
- Norfolk
- Poquoson
- Portsmouth
- Suffolk
- Surry
- Virginia Beach
- Williamsburg
- York County



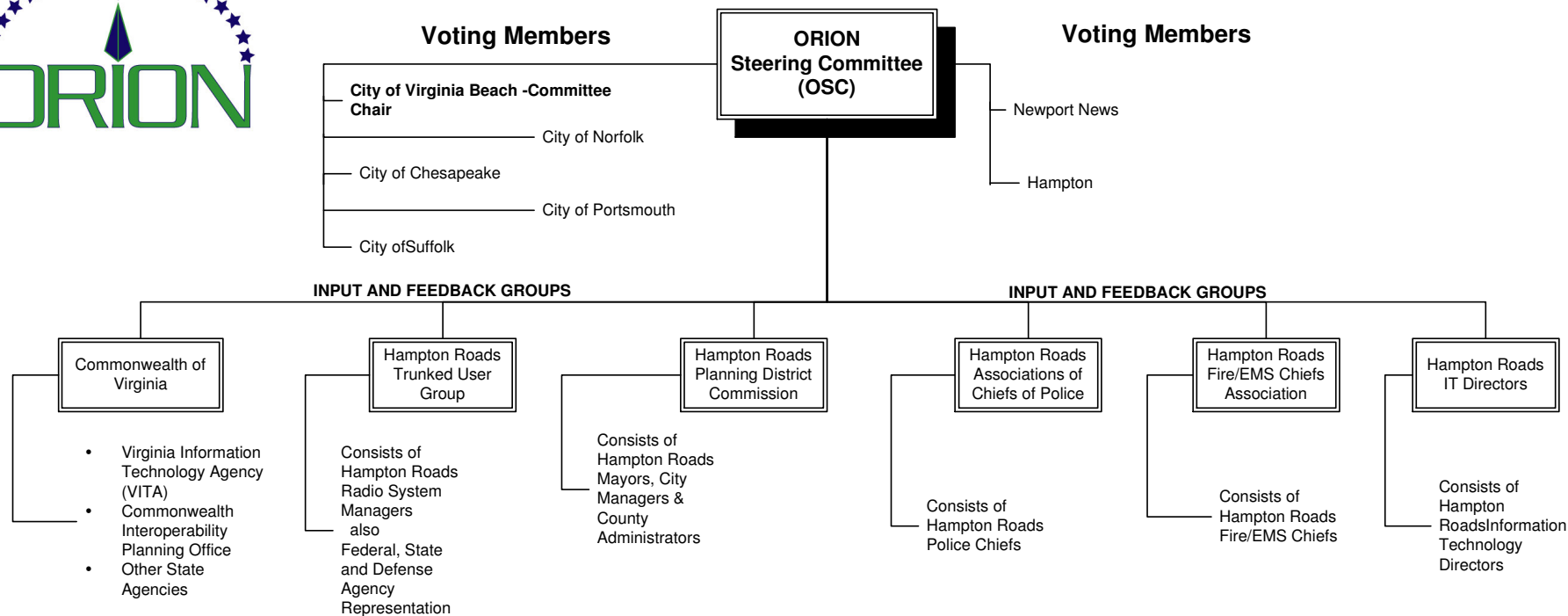
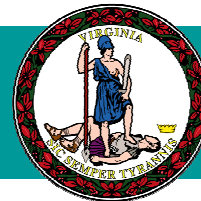
# Hampton Roads – Interoperability & Governance



Hampton Roads  
Interoperable Communications  
Advisory Committee  
Governing Structure  
Tuesday June 27 2006

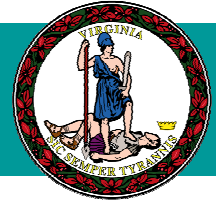


# Hampton Roads – Interoperability & Governance



**Interoperability Projects Only Work When the Proper Governance is in Place!**

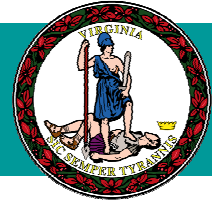




# Hampton Roads Tactical Regional Area Network



## HRTacRAN



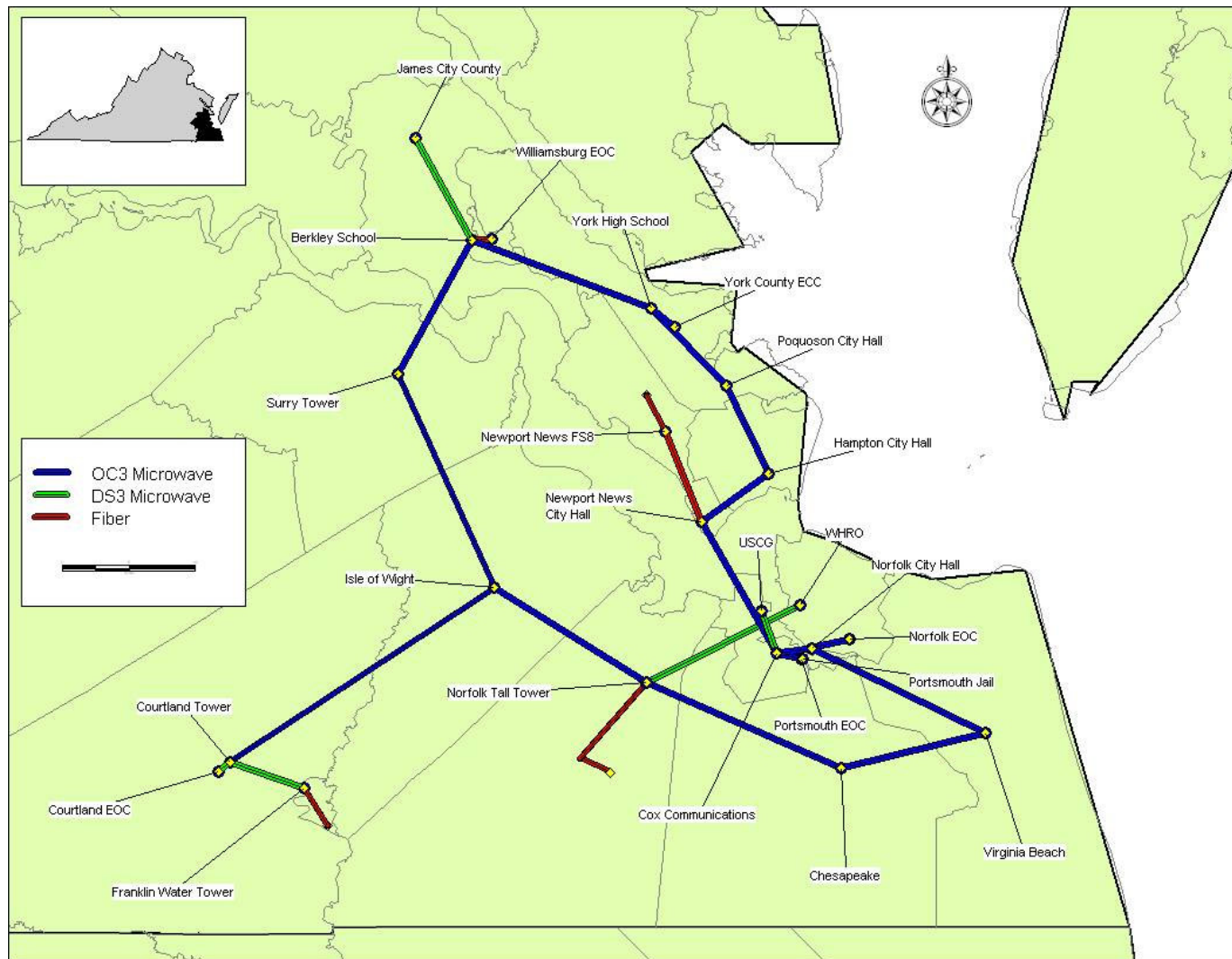
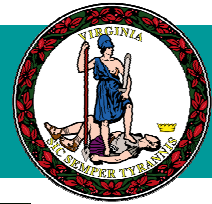
## HRTacRAN Includes:

- Regional Microwave and Patching System
- Emergency Voice Communications
- Regional IP Data Network
- Regional Video Teleconferencing & Collaboration

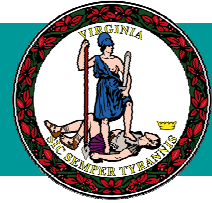
Links the 16 Hampton Roads Emergency Operations Centers with each other, as well as the Coast Guard and WHRO (Regional Public Broadcasting), via a TDM Voice and IP Data Network!



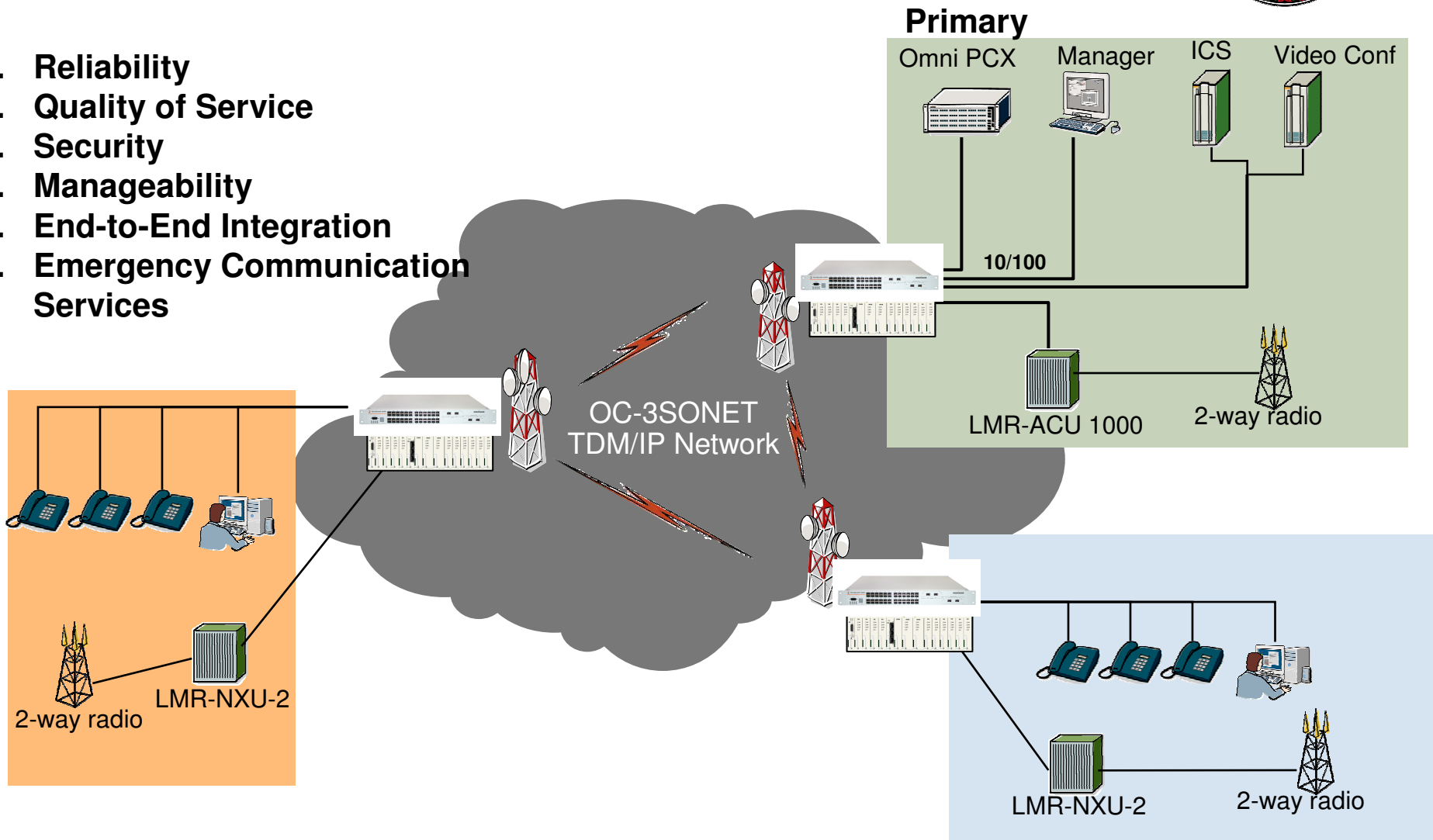
# HRTacRAN Provides Ethernet, OC3, DS3, and DS1



# HRTacRAN Provides Ethernet, OC3, DS3, and DS1

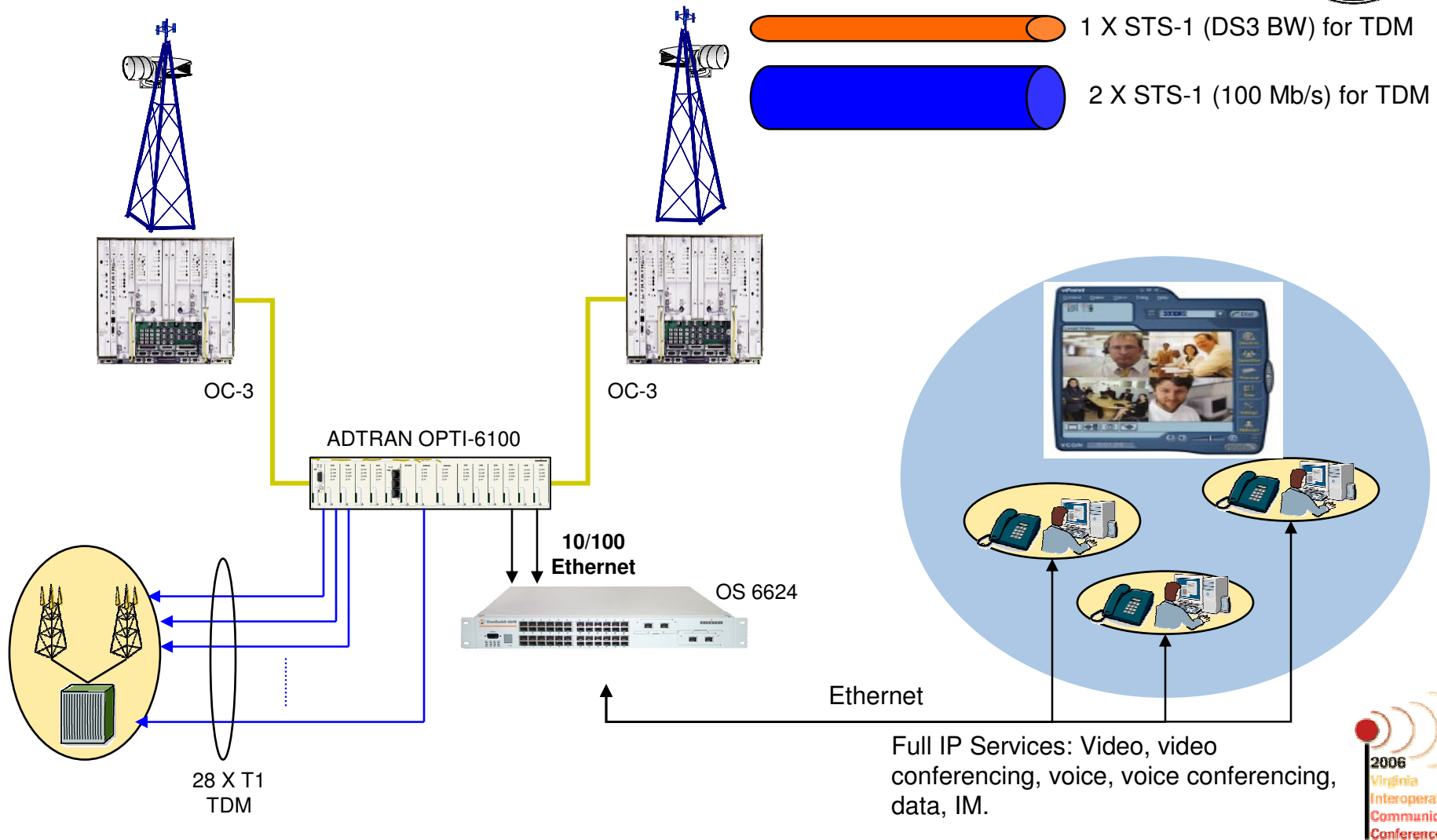
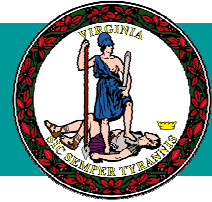


1. Reliability
2. Quality of Service
3. Security
4. Manageability
5. End-to-End Integration
6. Emergency Communication Services



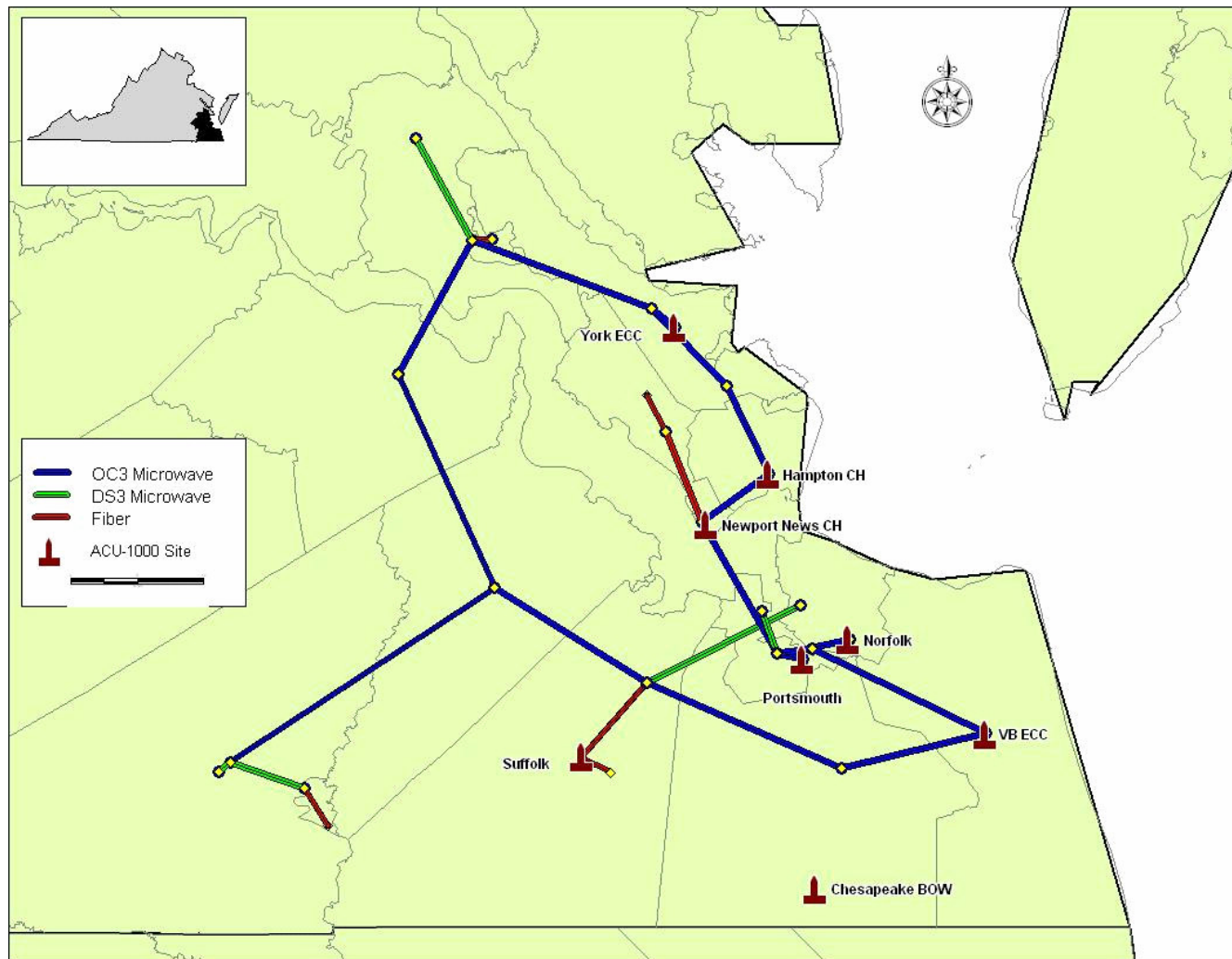
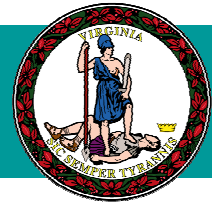


# HRTacRAN Provides Full IP Services

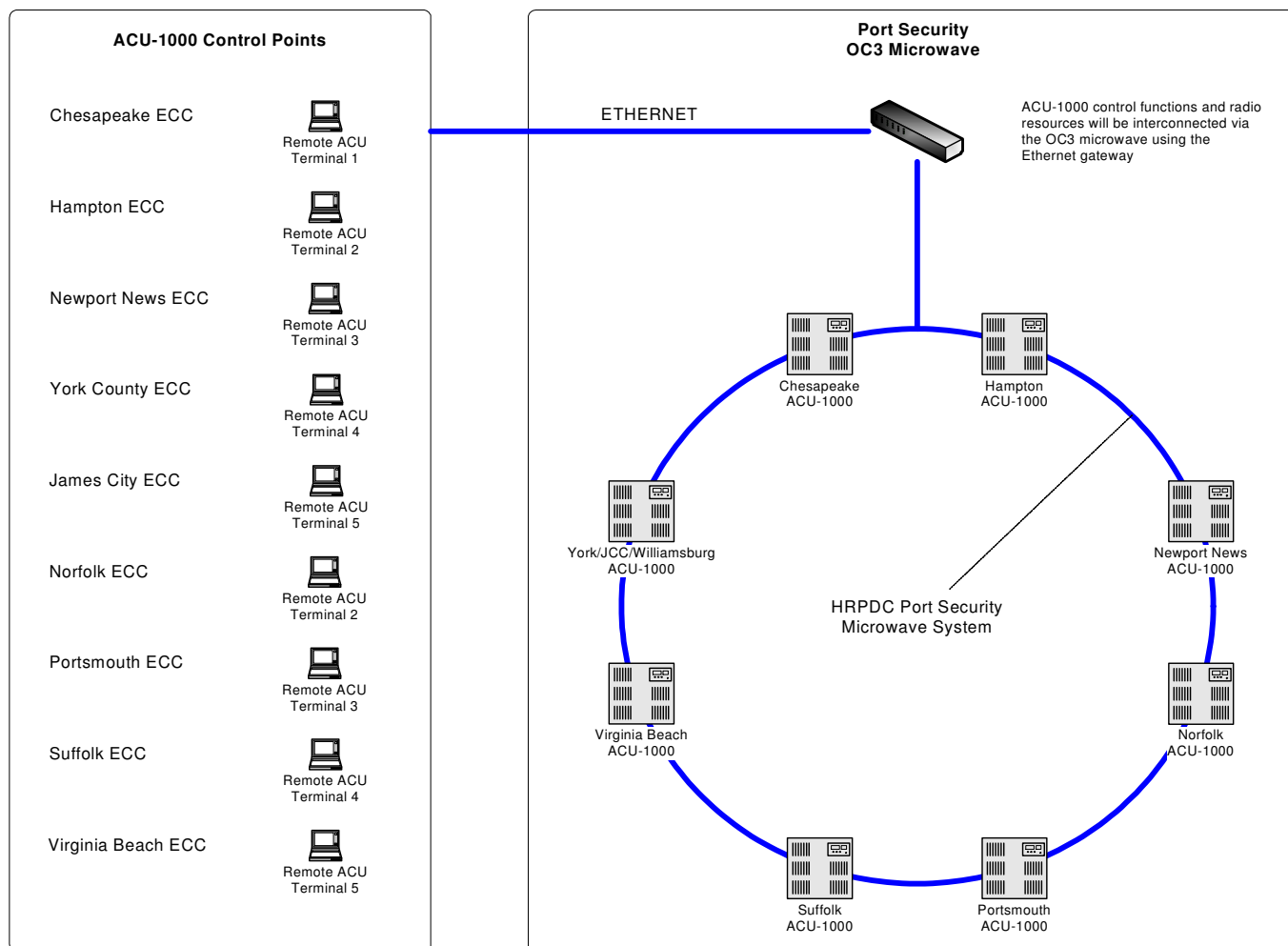
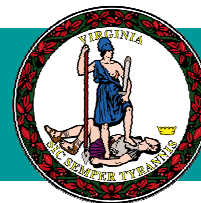




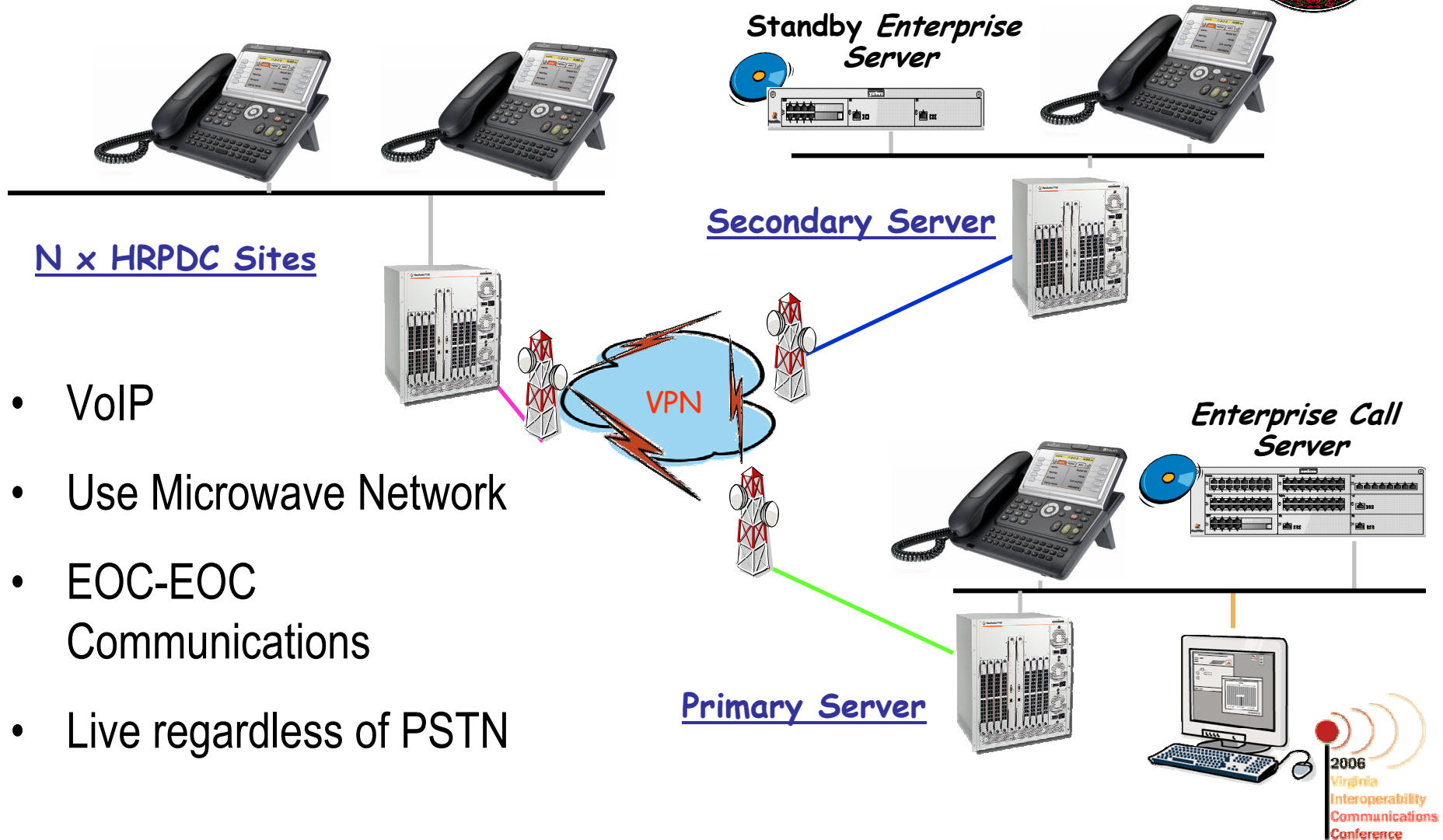
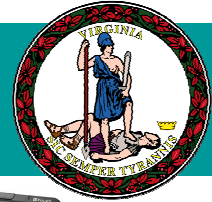
# ACU-1000 Patching Switches - Use Ethernet Gateway



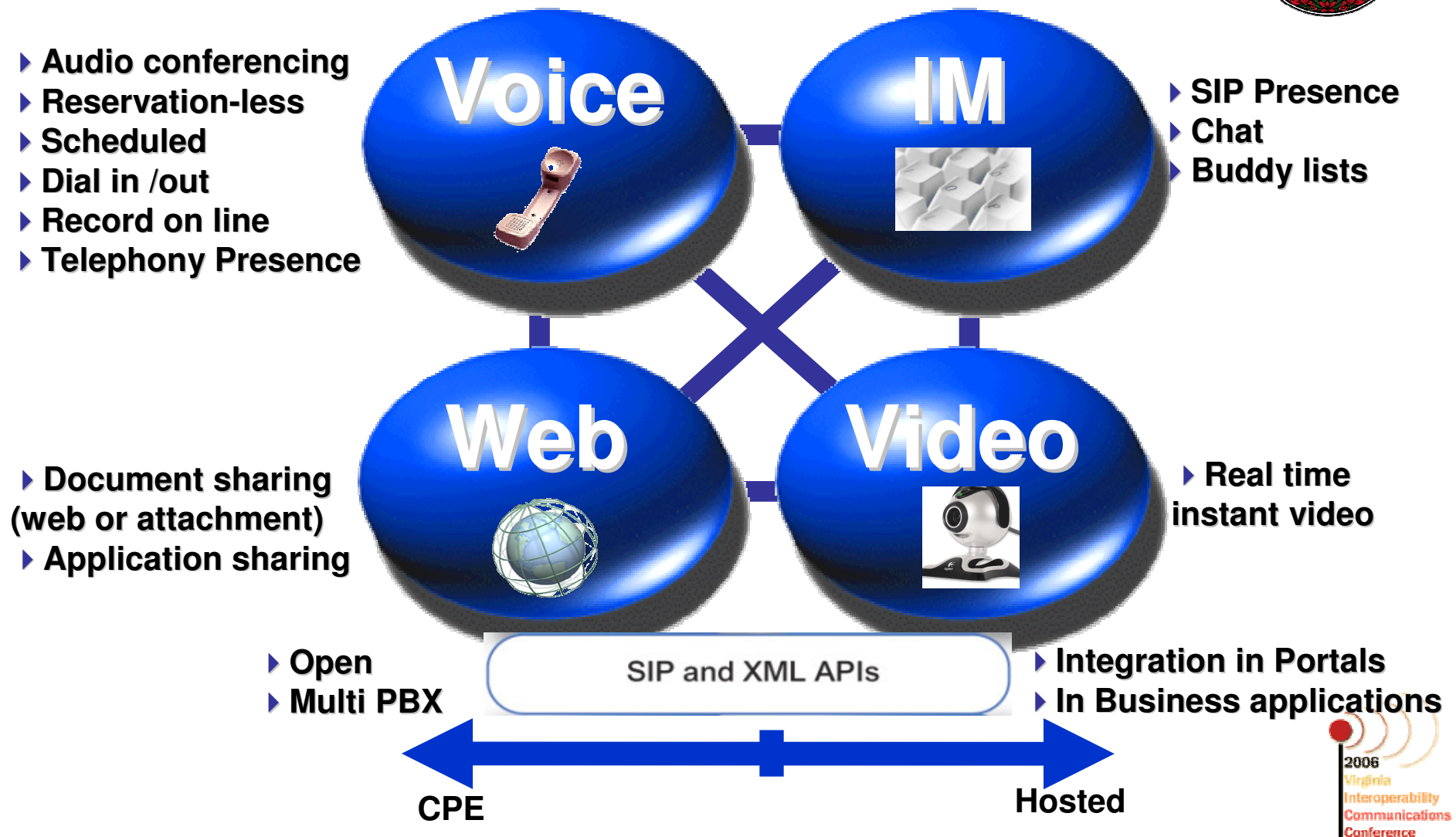
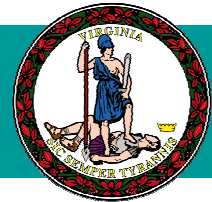
# ACU-1000 Patching Switches - Use Ethernet Gateway



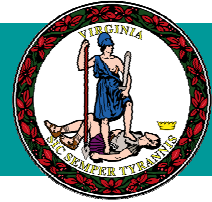
# HRTacRAN Provides Backup VoIP Services



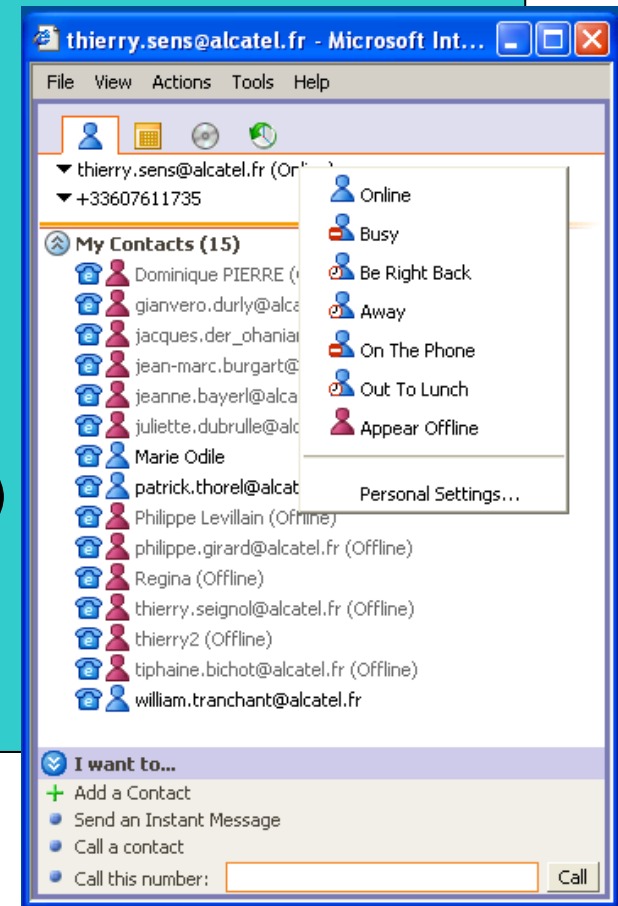
# HRTacRAN Provides Collaboration Services

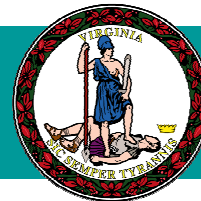


# HRTacRAN Provides Collaboration Services



- Real Time Audio, Instant Messaging & Web Conferencing
  - Pure software, Pure Web
  - Scheduled, Recurring, Meet Me and Ad Hoc
  - Dial in, Dial out
  - Document, Application, Desktop sharing
- Extended features
  - Integration with Video Conferencing
  - Recording (synchronized with presentations)
  - Full call logs/reporting
- SIP presence aware
  - Phone & On line presence

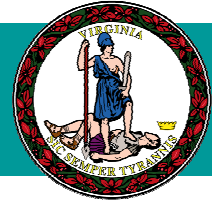




# Overlay Regional InterOperability Network



# ORION Regional Voice and Data Network

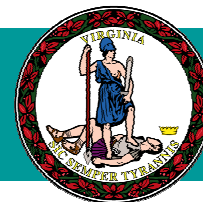


- ORION - **O**verlay **R**egional **I**nter**O**perability **N**etwork
  - P25 Regional Master Switch
  - 5 Channel 700MHz
  - 7 Regional Tower Locations
  - 700/800MHz P25 Mobile Radios for Command Vehicles
- High Speed Regional Mobile Data Network
  - 900MHz
  - Speeds of 1MB to the vehicle
  - 20+ Tower locations
  - Regional IP Network for Roaming
  - MDT for Command Vehicles



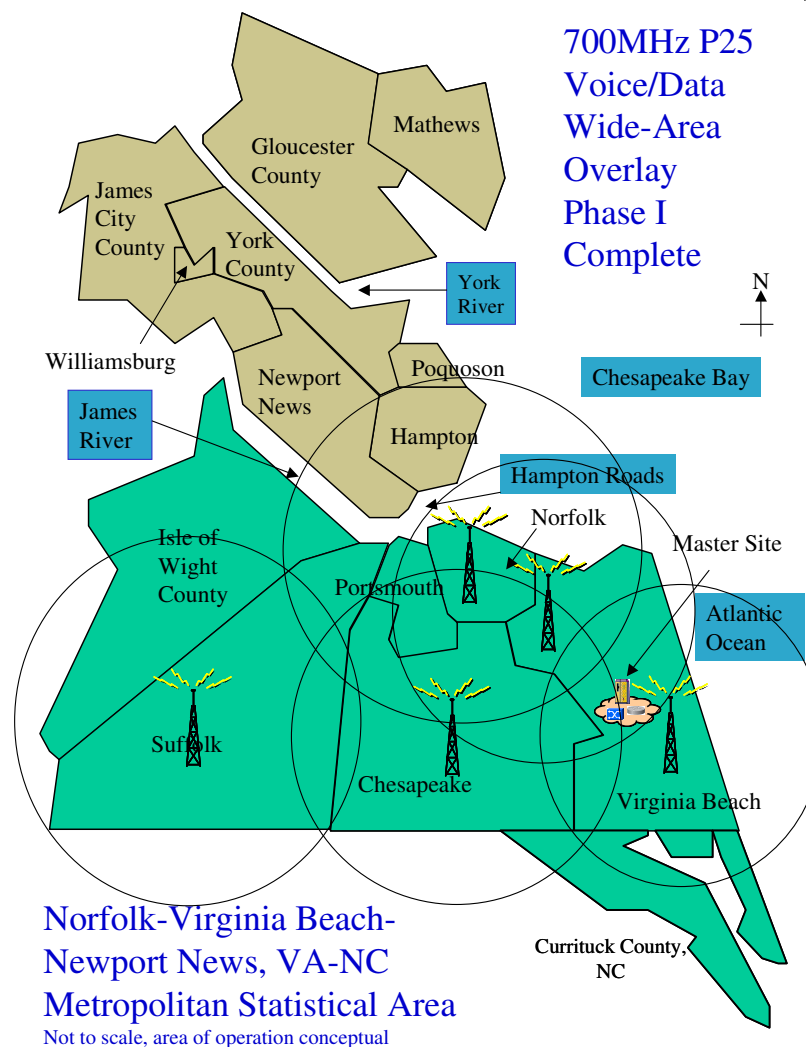


# ORION 700 MHz Voice System – Southside of Hampton Roads



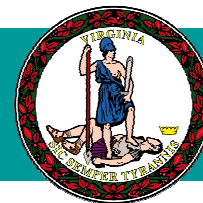
- 5 Site System
- P25 700MHz Transceiver
- Use Exist Tower Locations
- Mobile Coverage in Command Vehicles
- P25 Master Site in VB

Cities Covered:  
Suffolk, Chesapeake, Virginia Beach,  
Norfolk and Portsmouth



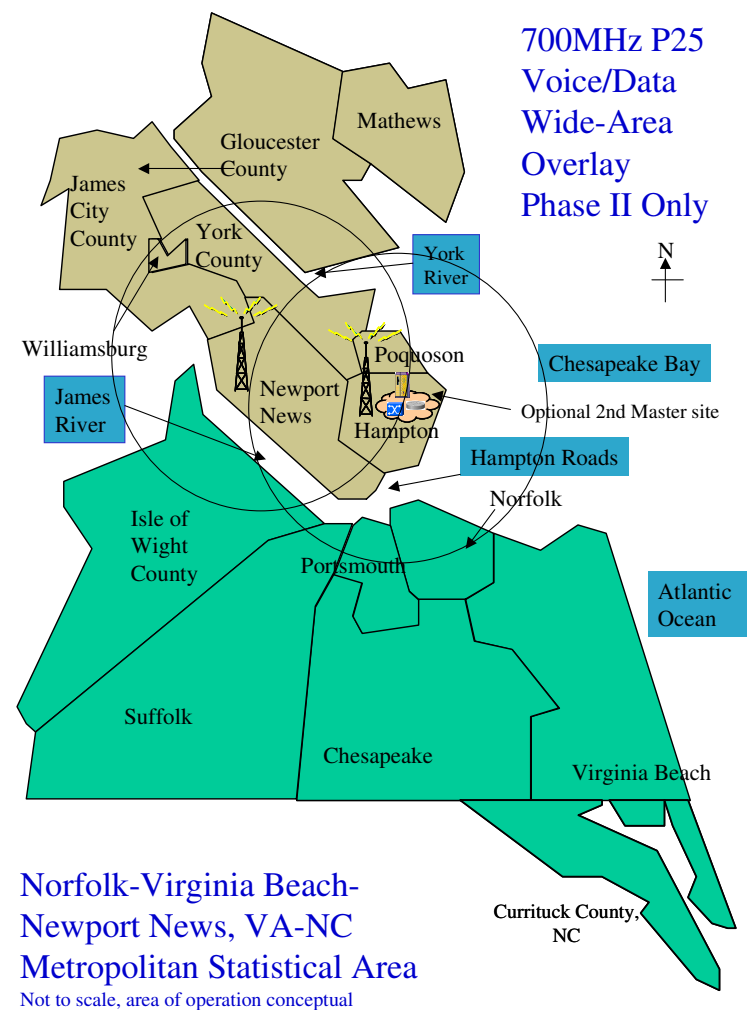


# ORION 700 MHz Voice System – Northside of Hampton Roads

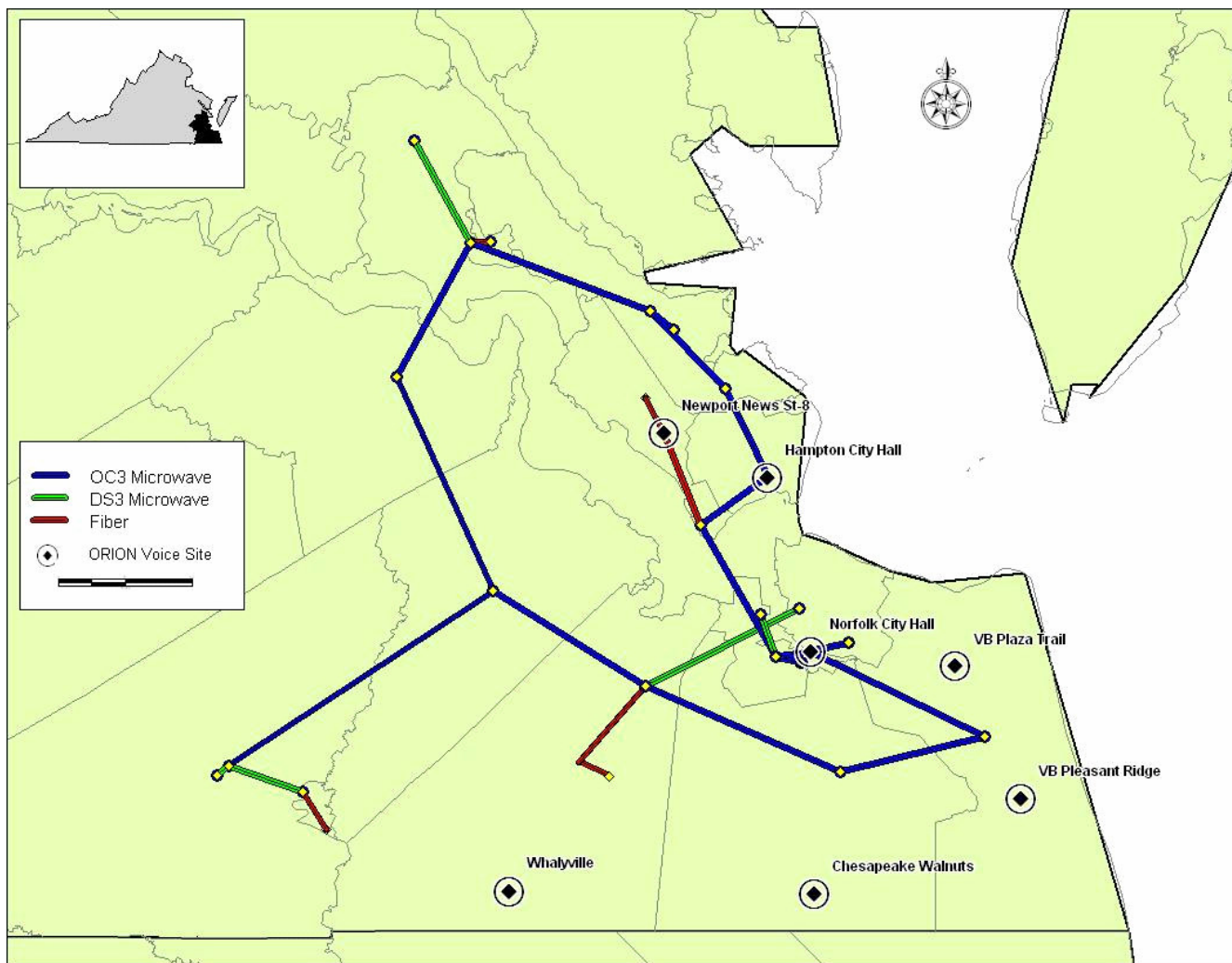
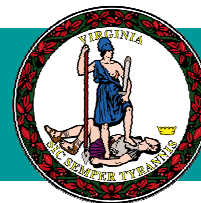


- 2 Additional Sites
- P25 700MHz Transceiver
- Use Exist Tower Locations
- Mobile Coverage in Command Vehicles

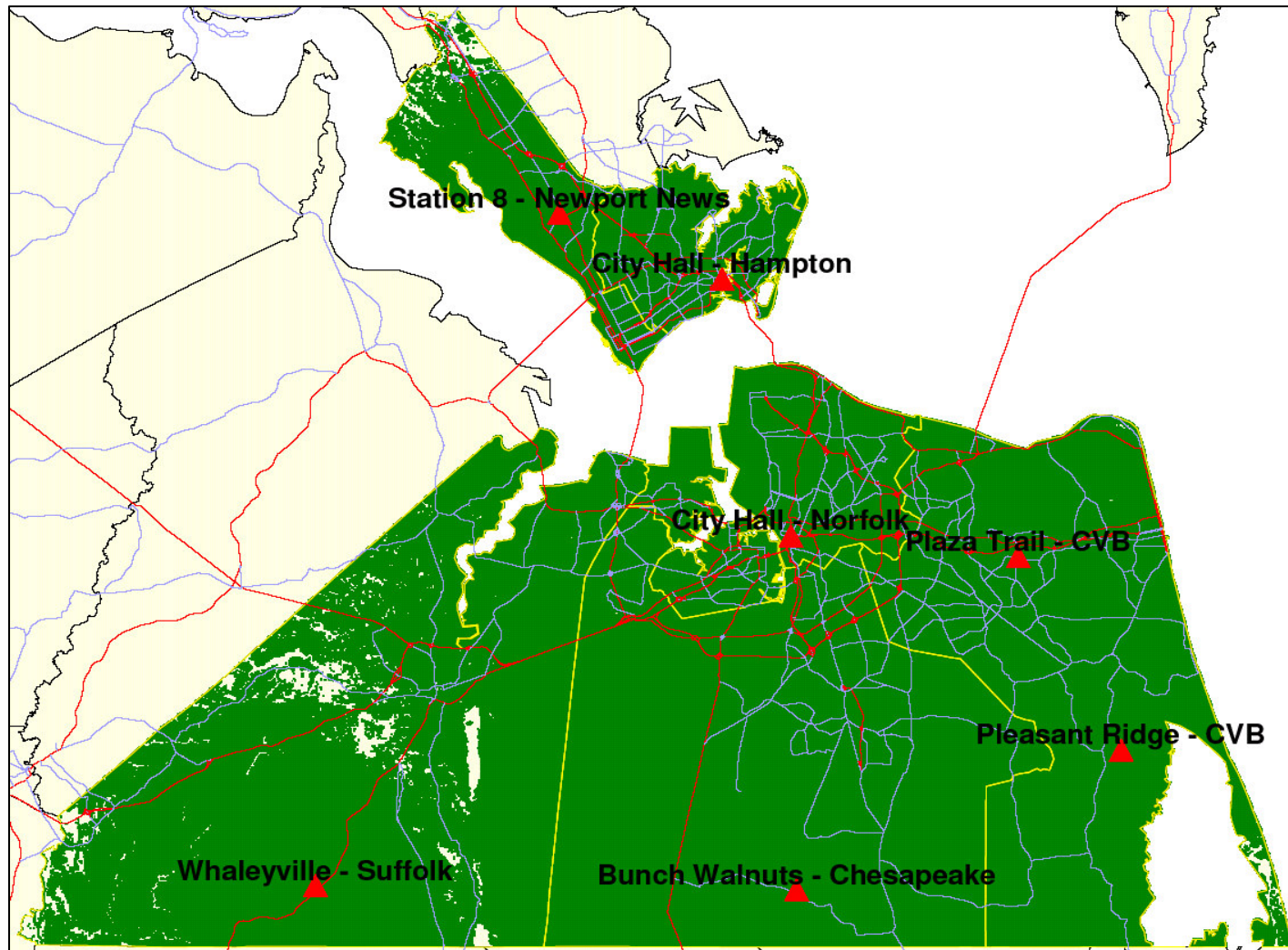
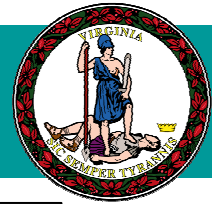
Cities Covered:  
Newport News and Hampton



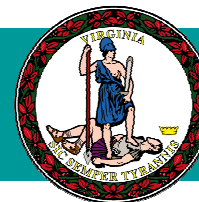
# ORION 700 MHz Voice System – Use HRTacRAN Backbone



# ORION 700 MHz Voice System Coverage



# ORION High-speed Data Network

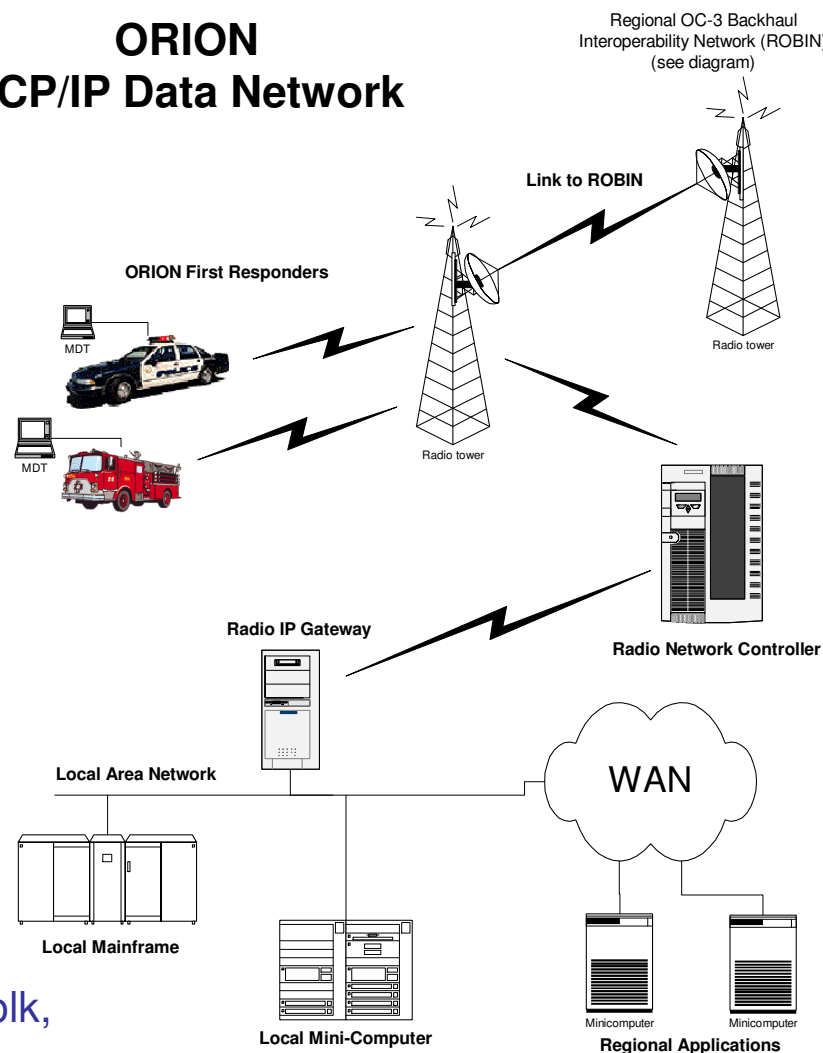


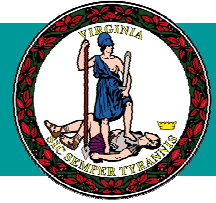
- 900MHz Transceiver
- 20+ Tower Sites in Region
- Use Exist Tower Locations
- Regional Roaming
- MDT Command Vehicles
- Speeds up to 1MB
- Share Regional Data
- 90%+ Coverage in Region

## Cities Covered:

Suffolk, Chesapeake, Virginia Beach, Norfolk, Portsmouth, Newport News and Hampton

## ORION TCP/IP Data Network

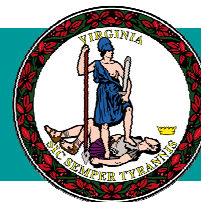




# Department of Justice 25 Cities Initiative



# DOJ 25 Cities

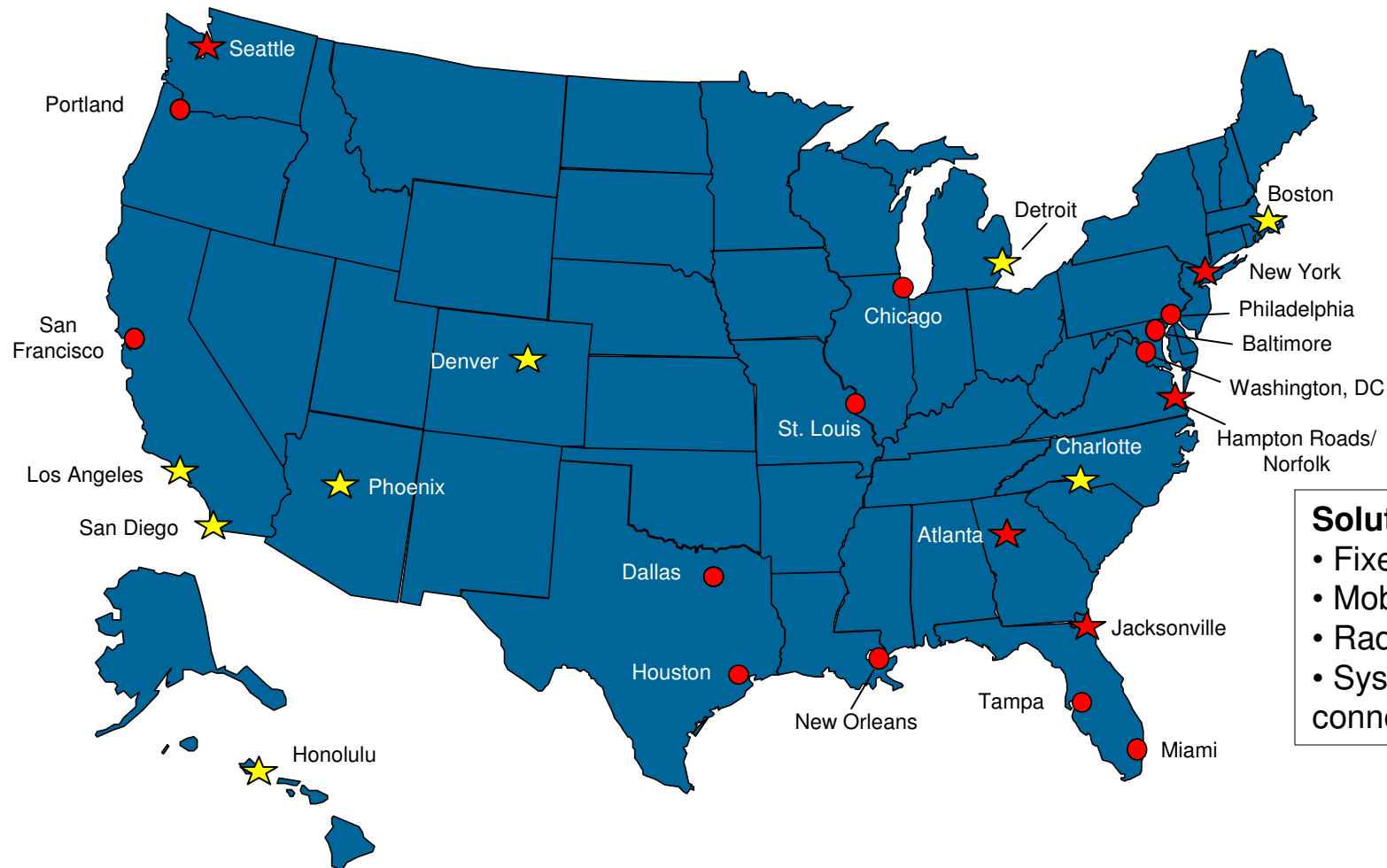
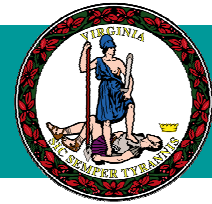


- **The DOJ 25 High-Risk Metropolitan Areas Interoperability Project** addresses the following request from the House/Senate CJS Appropriations Subcommittee staff to the DOJ Wireless Management Office (WMO)—
  - Provide federal law enforcement/homeland security agencies with basic inter-systems communication for emergency situations
  - Provide federal agents with the ability to connect with key local authorities (e.g., fire, police, emergency medical services [EMS]) in metropolitan areas that are the most likely targets for attack
- **The DOJ WMO** has worked in tandem with local, state, and federal representatives in each city to develop mutually agreeable and unique interoperability solutions tailored to that city/region. Where applicable, DOJ and its partners has leveraged existing communications infrastructure and ongoing local area interoperability initiatives
- **The DOJ WMO** has worked in close coordination with the Department of Homeland Security (DHS)/SAFECOM and Interoperable Communications Technical Assistance (ICTAP) programs, and the DOJ CommTech and Community Oriented Policing Services (COPS) programs





# DOJ 25 Cities (continued)



## Solutions

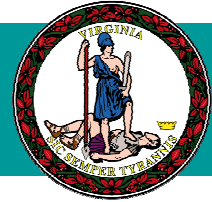
- Fixed gateways
- Mobile gateways
- Radio caches
- System to system connectivity

● New federal VHF narrowband interoperability channel

☆ Project complete (as of August 2006)



## DOJ 25 Cities (continued)



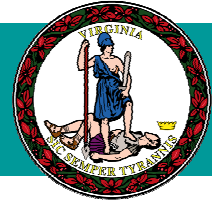
### Typical participants in 25 Cities project

Local	State	Federal	
▶ Airports	▶ DPS	▶ ATF	▶ NPS
▶ Emergency management	▶ Emergency management	▶ CBP	▶ TSA
▶ Emergency medical services	▶ Law enforcement	▶ DEA	▶ USCG
▶ Fire and rescue services	▶ National Guard	▶ DoD	▶ USMS
▶ Law enforcement	▶ Natural resources	▶ FBI	▶ USPIIS
▶ Ports	▶ Transportation	▶ FPS	▶ USPP
▶ Transportation authorities		▶ ICE	▶ USSS





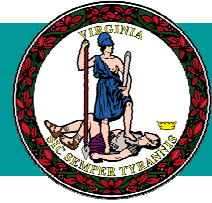
# DOJ Provided Support for Hampton Roads



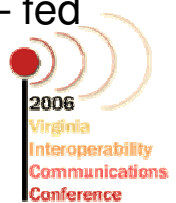
- Local, State, and Federal Coordination
- Standard Operating Procedures for the Fed-IO
- Funding for equipment and services
  - Federal Interoperability Channel – Fed-IO
  - Radio Resources for existing ACU-1000 switches



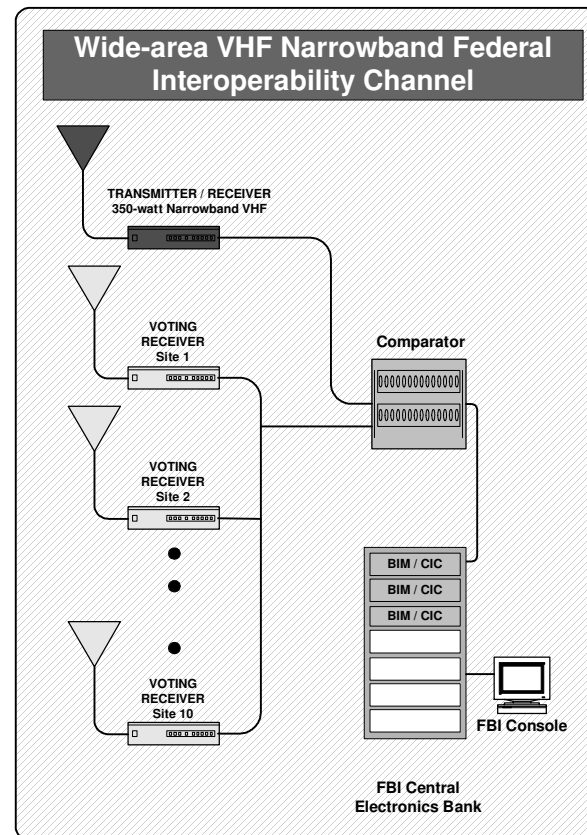
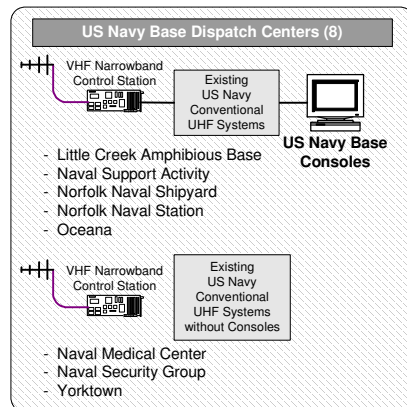
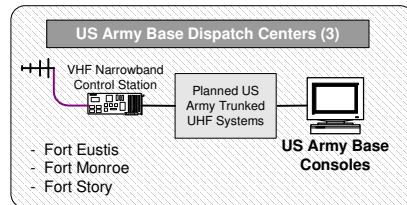
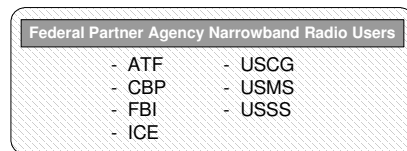
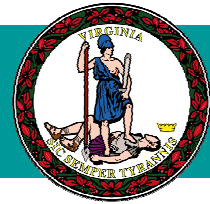
# HR Fed IO Channel



- Why a Federal interoperability channel?
  - Limited or no spectrum resources available in the area
  - Solution was easy to implement
  - Provided wide-area coverage
- What is the Federal interoperability channel?
  - Sites provided and maintained by the FBI
  - Narrowband VHF channel consists of a 350-Watt transmitter and 10 voted receive sites
  - Control stations enable wireless linking to the Fed IO channel, on an as-needed basis, for USPIS, NASA, and local Army, Navy, and Air Force bases
  - Primarily designed for command and control but available for tactical operations – fed to fed and fed to local



# HR Fed IO Channel (continued)

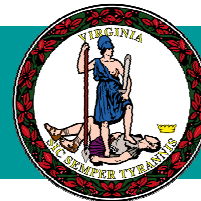


## Solution

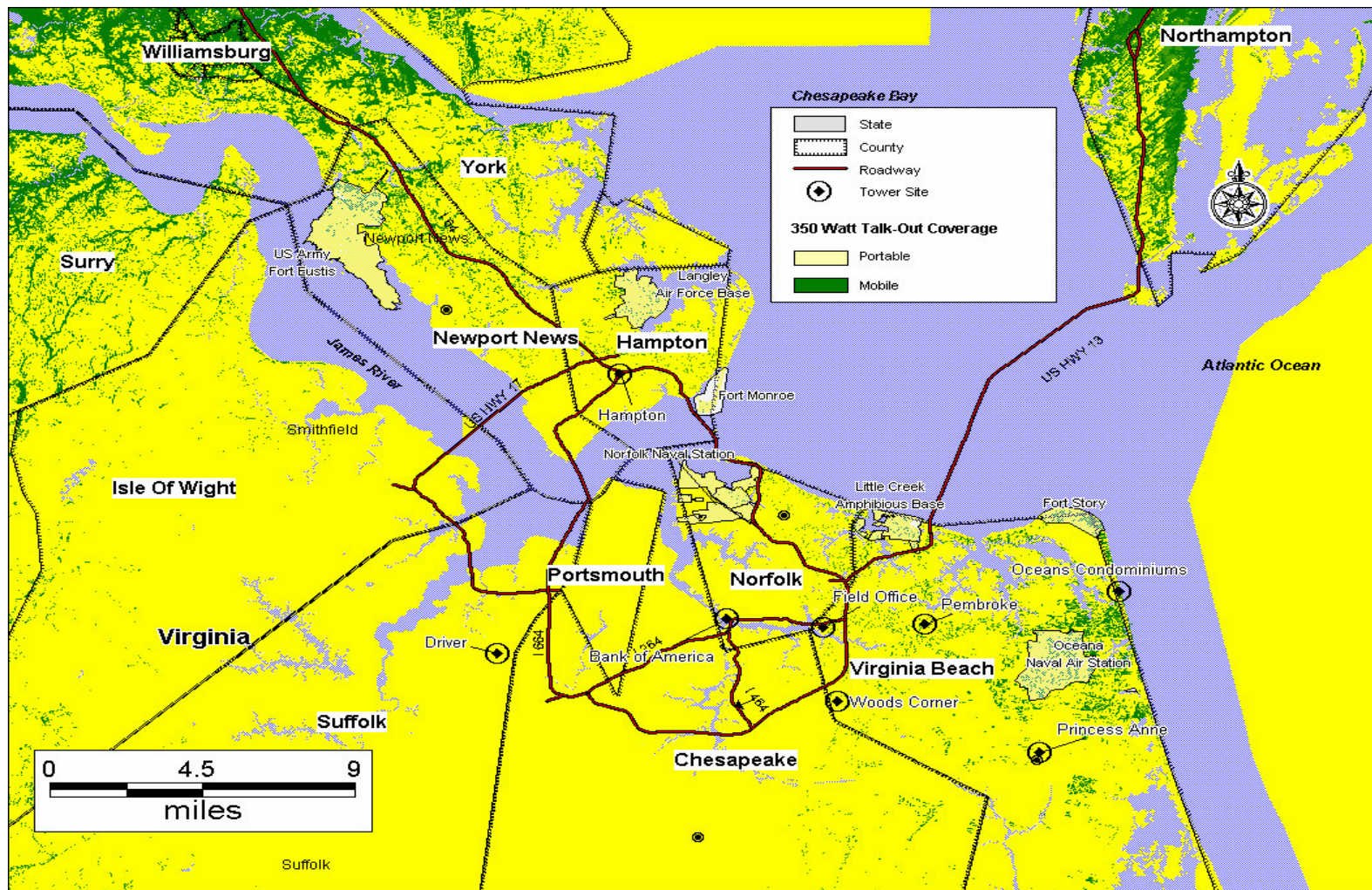
- The channel serves as a common interoperable wide-area communications resource for federal agencies during emergency response
- Federal agencies with narrowband subscriber units (i.e., FBI, USMS, ATF, USSS, USCG, and DEA) have direct access.
- Local and state agencies could also link to agencies on the federal interoperability channel via control stations at their dispatch centers or through a fixed interoperability switch



# HR Fed IO Channel (continued)

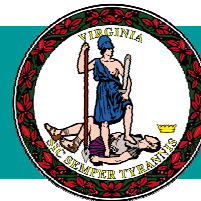


Talk Out

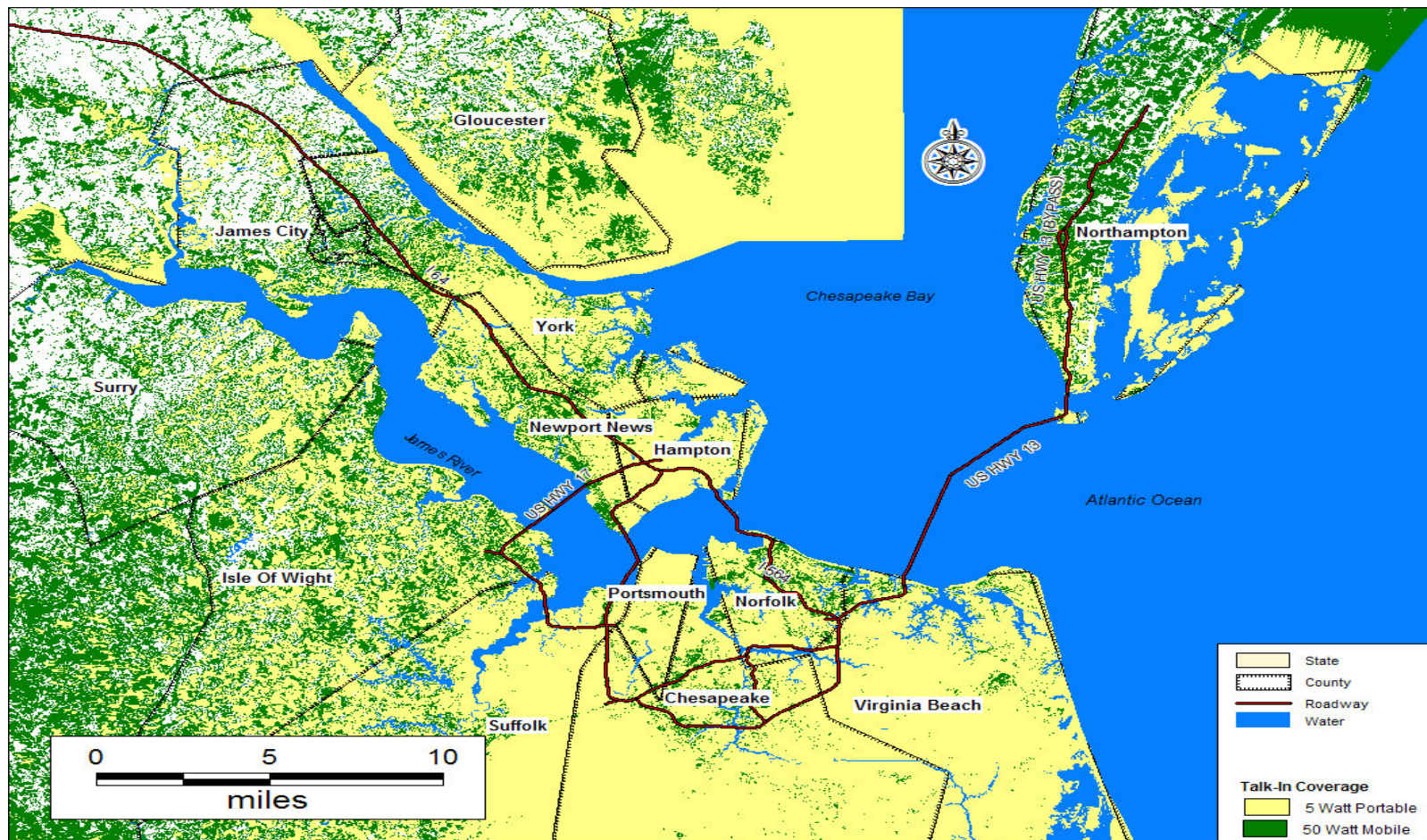


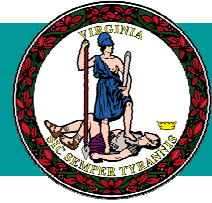


# HR Fed IO Channel (continued)



Talk In



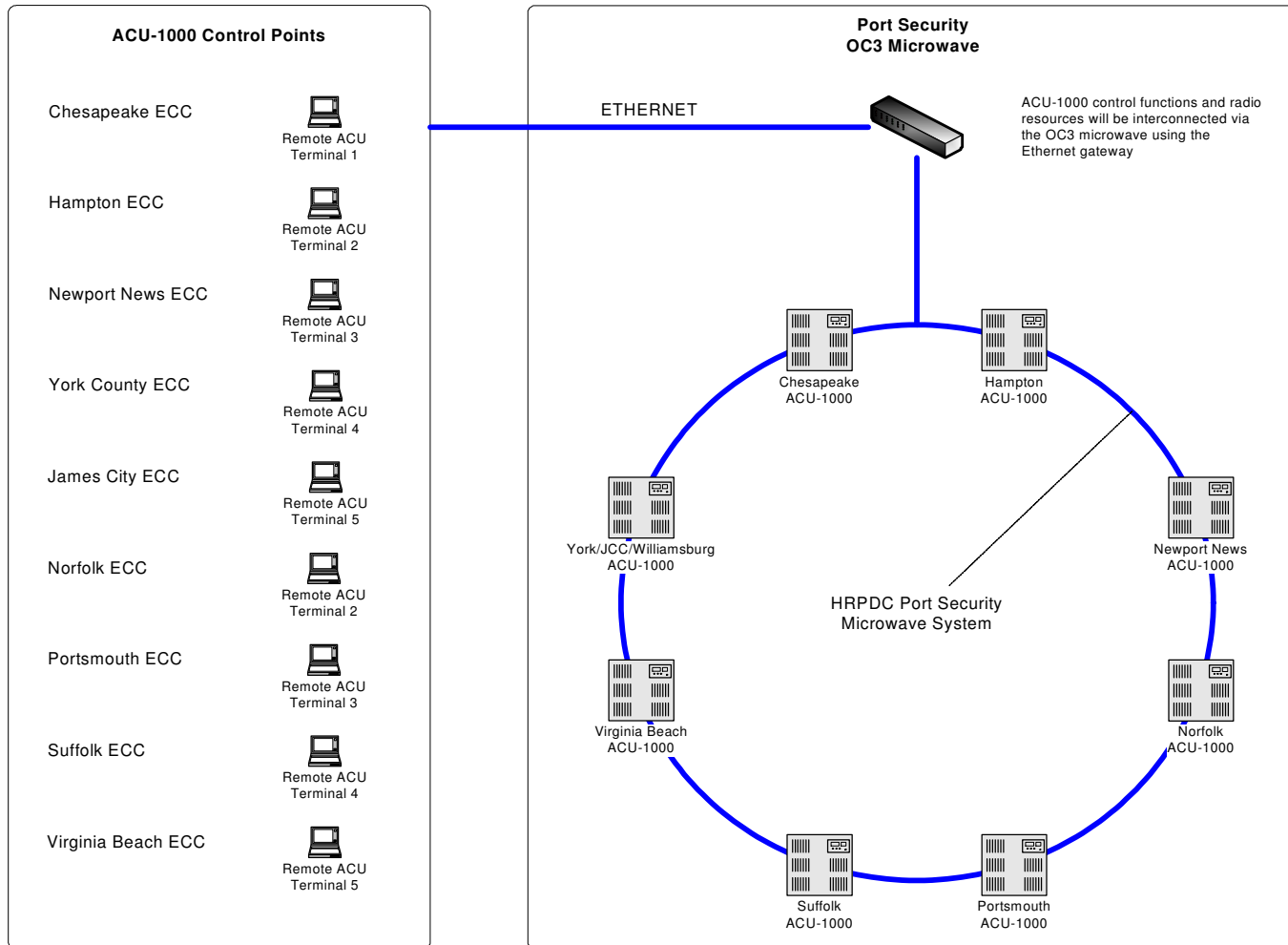
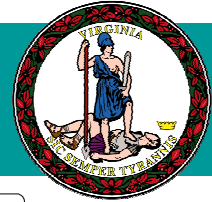


## **FBI holds a bi-weekly roll call with the following entities:**

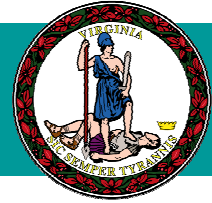
- Bureau of Alcohol, Tobacco, Firearms and Explosives
- City of Virginia Beach
- Customs and Border Protection
- Immigrations and Customs Enforcement
- Fort Eustis US Army
- Fort Monroe US Army
- Fort Story US Army
- Joint Task Force Civil Support (JTFCS)
- Langley US Air Force
- Little Creek Amphibious Base US Navy
- NASA
- Naval Medical Center
- Naval Regional Operation Center (ROC)
- Naval Support Activity Group
- Naval Support Activity Northwest Annex
- NERO Ops Fort Monroe
- Norfolk Navy Shipyard
- Norfolk Naval Station
- Oceana Naval Air Station
- US Coast Guard
- US Marshals
- US Postal Inspection Service
- Yorktown Naval Weapons Station



# Radio Resources for ACU-1000 Switches



# Radio Resources for ACU-1000 Switches



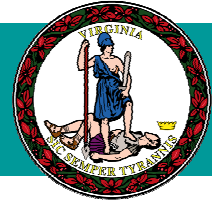
## Radio Resource Distribution

- Chesapeake – 7
- Hampton – 5
- Newport News – 4
- Norfolk – 8
- Portsmouth – 7
- Suffolk – 8
- Virginia Beach – 8
- York/JCC/Williamsburg – 3
- **Total – 50**





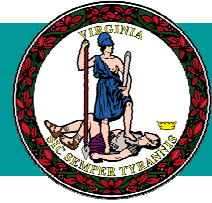
# In Closing



- Hampton Roads Tactical Regional Area Network (HRTacRAN) – Completed
- Overlay Regional InterOperability Network (ORION)
  - 700MHz Voice – Final Acceptance Phase
  - 900MHz Mobile Data – Completion projected for Q1 2007
- DOJ 25 Cities Initiative
  - FED-IO Channel Completed
  - Radio Resources – Completion projected for Q1 2007



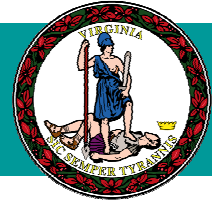
# Interoperability Summary



- Have a strong governance model
- Shared understanding
- Include end users early and often
- Include other key stakeholders
  - Federal and DOD partners
  - State
  - Other regional entities – Public Broadcasting
- Need to commit the time
- Solutions require both technical and operational expertise to be useful

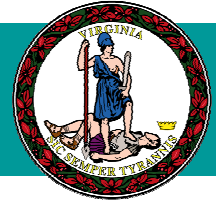


# Contact Information



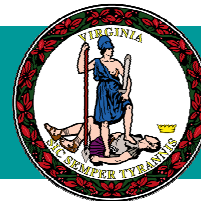
- Doug Onhaizer  
City of Virginia Beach  
757.385.1847, donhaize@vbgov.com
- Rob DeLauney  
City of Virginia Beach  
757.385.4066, rdelaune@vbgov.com
- Dan Guild  
FBI Norfolk  
757.455.2505, dguild@leo.gov
- Paul Torpey  
BAE Systems for DOJ  
703.322.1673, paul.torpey@usdoj.gov





# Thank you





# Questions and Answers

